LISTING OF THE CLAIMS

Following is a listing of the claims pending in the present application:

1. **(Previously Presented)** A semiconductor laser comprising:

a gain region having wavelength selectivity;

a propagating region optically coupled to said gain region, having an effective refractive index whose temperature dependence differs from that of said gain region, and having no wavelength selectivity; and

a reflection region for reflecting light propagated through said propagating region,

wherein said gain region comprises a diffraction grating formed by periodic perturbation with at least one of real and imaginary parts of a complex refractive index and the coupling coefficient of the diffraction grating of said gain region is greater than 300 cm^{-1}.

2. **(Previously Presented)** A semiconductor laser comprising:

a gain region having wavelength selectivity;

a propagating region optically coupled to said gain region, having a material with an effective refractive index whose temperature dependence differs from that of said gain region, and having no gain nor wavelength selectivity; and

a reflection region that reflects light propagated through said propagating region, and has no gain,

wherein said gain region comprises a diffraction grating formed by periodic perturbation with at least one of real and imaginary parts of a complex refractive index and the coupling coefficient of the diffraction grating of said gain region is greater than 300 cm^{-1}.

3. **(Previously Presented)** A semiconductor laser comprising:

a gain region having wavelength selectivity;

a propagating region optically coupled to said gain region, having a structure with an effective refractive index whose temperature dependence differs from that of said gain region, and having no gain nor wavelength selectivity; and

a reflection region that reflects light propagated through said propagating region, and has no gain,

wherein said gain region comprises a diffraction grating formed by periodic perturbation with at least one of real and imaginary parts of a complex refractive index and the coupling coefficient of the diffraction grating of said gain region is greater than 300 cm^{-1}.

4. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein said reflection region has a mirror or a diffraction grating with a periodic structure.

5. **(Previously Presented)** A semiconductor laser comprising:

a first gain region having wavelength selectivity;

a propagating region optically coupled to said first gain region, having a material with an effective refractive index whose temperature dependence differs from that of said gain region, and having no gain nor wavelength selectivity; and

a second gain region optically coupled to said propagating region, and having wavelength selectivity,

wherein said gain region comprises a diffraction grating formed by periodic perturbation with at least one of real and imaginary parts of a complex refractive index and the coupling coefficient of the diffraction grating of said gain region is greater than 300 cm^{-1}.

6. **(Previously Presented)** A semiconductor laser comprising:

a first gain region having wavelength selectivity;

a propagating region optically coupled to said first gain region, having a structure with an effective refractive index whose temperature dependence differs from that of said gain region, and having no gain nor wavelength selectivity; and

a second gain region optically coupled to said propagating region, and having wavelength selectivity,

wherein said gain region comprises a diffraction grating formed by periodic perturbation with at least one of real and imaginary parts of a complex refractive index and the coupling coefficient of the diffraction grating of said gain region is greater than 300 cm^{-1}.

7. **(Previously Presented)** The semiconductor laser as claimed in claim 3, wherein said structure is different from a structure of the gain region in at least one of a layer structure, layer thickness and waveguide width.

8. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein an absolute value of a product of a length of said propagating region and a difference between a temperature differential coefficient of the effective refractive index of said gain region and a temperature differential coefficient of the effective refractive index of said propagating region is equal to or greater than 7.5×10^{-4} [μm/K].

9. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein said propagating region is composed of a material whose temperature differential coefficient of the effective refractive index is different from that of a semiconductor.

10. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein said propagating region is composed of a material whose temperature differential coefficient of the effective refractive index is negative.

11. **(Canceled)**

12. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein the length of said propagating region is determined such that a longitudinal mode spacing determined by a sum of an effective length of the diffraction grating of said gain region and a length of said propagating region, is greater than a stop bandwidth of said diffraction grating.

13. **(Canceled)**

14. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein said gain region, said propagating region and said reflection region are stacked.

15. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein said gain region and said propagating region are coupled via optical path changing means.

16. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein said propagating region has a waveguide structure having an optical confinement structure on at least one of upper and lower portions and left and right portions.

17-49. **(Canceled)**

50. **(Previously Presented)** The semiconductor laser as claimed in claim 1, wherein the stop bandwidth of the diffraction grating of said gain region is increased by setting the coupling coefficient of the diffraction grating of said gain region at least at 300 cm^{-1}.

51. **(Previously Presented)** The semiconductor laser as claimed in claim 2, wherein the stop bandwidth of the diffraction grating of said gain region is increased by setting the coupling coefficient of the diffraction grating of said gain region at least at 300 cm^{-1}.

52. **(Previously Presented)** The semiconductor laser as claimed in claim 3, wherein the stop bandwidth of the diffraction grating of said gain region is increased by setting the coupling coefficient of the diffraction grating of said gain region at least at 300 cm^{-1}.

53. **(Previously Presented)** The semiconductor laser as claimed in claim 5, wherein the stop bandwidth of the diffraction grating of said gain region is increased by setting the coupling coefficient of the diffraction grating of said gain region at least at 300 cm^{-1}.

54. **(Previously Presented)** The semiconductor laser as claimed in claim 6, wherein the stop bandwidth of the diffraction grating of said gain region is increased by setting the coupling coefficient of the diffraction grating of said gain region at least at 300 cm^{-1}.